

Date: Monday, 1/7/2008 3:39:45 PM  
User: Kim Johnston

## Process Sheet

|  |   |
|--|---|
| Customer : CU-DAR001 Dart Helicopters Services | Drawing Name : LEFT ARM WELDMENT              |
| Job Number : 36649                             |   |
| Estimate Number : 12080                        |   |
| P.O. Number :                                  | Part Number : D33543                          |
| This Issue : 1/7/2008 S.O. No. :               | Drawing Number : D3354 REV C                  |
| Prsht Rev. : NC                                | Project Number : N/A                          |
| First Issue : 1/1 Type : MACHINED PARTS        | Drawing Revision : C                          |
| Previous Run : 36232                           | Material :                                    |
| Written By : <u>08.01.8</u>                    | Due Date : 1/31/2008 Qty: <u>10.</u> Um: Each |
| Checked & Approved By : <u>08.01.8</u>         |   |
| Comment : est rev A 06.01.23 new issue EC      |   |
| Est Rev:B 07-12-10 rev C dwg DD                |   |

## Additional Product

Job Number:



|         |                       |               |
|---------|-----------------------|---------------|
| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|---------------|

|     |             |                 |
|-----|-------------|-----------------|
| 1.0 | M4130NR1250 | 4130N ROUND BAR |
|-----|-------------|-----------------|



(10)

Comment: Qty: 0.6300 f(s)/Unit Total : 2.5200 f(s) 6.5000  
AISI 4130 ROUND BAR 1.250" dia. batch: M106961

H.A 08/02/04

|     |          |                          |
|-----|----------|--------------------------|
| 2.0 | HARDINGE | HARDINGE CNC LATHE SMALL |
|-----|----------|--------------------------|



Comment: 1-TURN AS PER FOLIO FA623 & DWG D3354  
FOLIO REV: AA  
DWG REV: C

(10)

2-DEBURR AS REQUIRED

H.A/mk 08/02/04

|     |     |  |
|-----|-----|--|
| 3.0 | QC2 | INSPECT PARTS AS THEY COME OFF MACHINE |
|-----|-----|--|



(10)

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

H.A/mk 08/02/04

|     |               |                              |
|-----|---------------|------------------------------|
| 4.0 | MILLING CONV. | CONVENTIONAL MILLING MACHINE |
|-----|---------------|------------------------------|



Comment: CONVENTIONAL MILLING MACHINE  
1-Drill cotter pin hole as per dwg D3354

2-Debur

J.F. 08/02/06 (10)

|     |     |              |
|-----|-----|--------------|
| 5.0 | QC8 | SECOND CHECK |
|-----|-----|--------------|



Comment: SECOND CHECK

J.F. 08/02/06 (10)

**Dart Aerospace Ltd**

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☐ No ☒ DQA: AE Date: 08/02/00  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                             |                                 |                |                           |                       |                          |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng        | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |
|      |      |                                  |                             |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

Date: Monday, 1/7/2008 3:39:45 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: LEFT ARM WELDMENT

Job Number: 36649

Part Number: D33543

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: ST485

AS 08/02/07

(X10)

7.0

QC21

FINAL INSPECTION/W/O RELEASE



(10)

Comment: FINAL INSPECTION/W/O RELEASE

AS 08/02/08

Job Completion



mi 2008/2/07

(10)

W

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries

|                          |                |              |             |
|--------------------------|----------------|--------------|-------------|
| DART AEROSPACE LTD       |                | Work Order:  | 36649       |
| Description: Wheel Shaft |                | Part Number: | D3354-3     |
| Inspection Dwg: D3354    | Rev: <i>AC</i> |              | Page 1 of 1 |

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

| Drawing Dimension | Tolerance                  | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|-------------------|----------------------------|------------------|--------|--------|----------------------|----------|
| 7.04              | +/-0.030                   | 7.039            | ✓      |        |                      |          |
| 4.020             | +0.010/-0.000              | 4.025            | ✓      |        |                      |          |
| 0.85              | +/-0.030                   | 0.849            | ✓      |        |                      |          |
| 0.06              | +/-0.030                   | 0.060            | ✓      |        |                      |          |
| 0.13              | +/-0.030                   | 0.135            | ✓      |        |                      |          |
| Ø1.250            | +0.001/-0.004              | Ø1.248           | ✓      |        |                      |          |
| Ø1.103            | +0.001/-0.002              | Ø1.102           | ✓      |        |                      |          |
| 0.750 Thread      | +/-0.010                   | .745             | ✓      |        |                      |          |
| 0.03 x 45°        | +/-0.030 x 0.5°            | .035 x 0.5°      | ✓      |        |                      |          |
| Ø0.152            | +0.005/-0.001              | Ø.151"           | ✓      |        |                      | milling  |
| R0.02             | +/-0.030                   | R0.02            |        |        |                      |          |
| R0.050            | +/-0.010                   | R0.050           |        |        |                      |          |
| 0.660             | +/-0.010                   | .660"            | ✓      |        |                      | milling  |
| MOW = 2A          | min → .7687<br>max → .7737 | .7717            | ✓      |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |

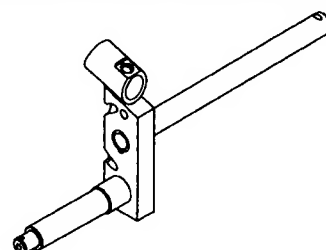
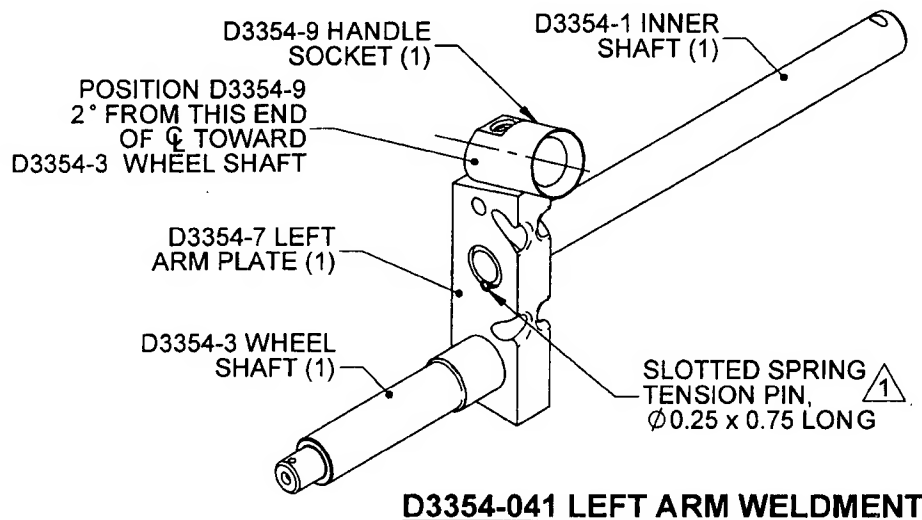
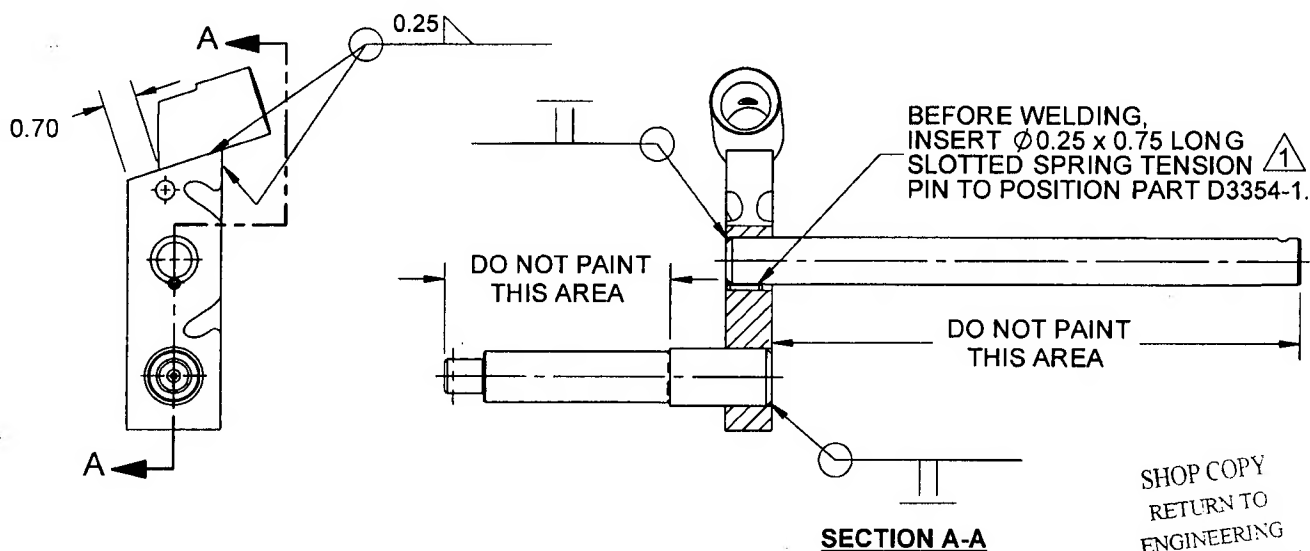
|                                     |                       |                     |     |
|-------------------------------------|-----------------------|---------------------|-----|
| Measured by: <i>B.A. / gmk / JF</i> | Audited by: <i>EC</i> | Prototype Approval: | N/A |
| Date: <i>08/02/04</i>               | Date: <i>08-02-04</i> | Date:               | N/A |

| Rev | Date     | Change                   | Revised by       | Approved  |
|-----|----------|--------------------------|------------------|-----------|
| A   | 07.01.17 | New Issue                | KJ/JLM           |           |
| B   | 07.04.20 | Ø0.152 dimension removed | KJ/JLM <i>JA</i> | <i>JA</i> |



**DART**

|                         |                       |   |                        |
|-------------------------|-----------------------|---|------------------------|
| DESIGN<br><i>RF</i>     | DRAWN BY<br><i>JC</i> | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                |                        |
| CHECKED<br><i>LB</i>    | APPROVED<br><i>MP</i> | DRAWING NO.<br><b>LEFT ARM WELDMENT</b>                                 | REV. C<br>SHEET 1 OF 7 |
| DATE<br><b>07.12.06</b> |                       | TITLE<br><b>D3354</b>   | SCALE<br>1:4           |
| REV                     | DATE                  | DESCRIPTION   |                        |
| A                       | 04.12.13              | NEW ISSUE   |                        |
| B                       | 07.02.02              | REVISED DIMENSIONS  |                        |
| C                       | 07.12.06              | CHANGE TOLERANCE ON D3354-7 LEFT ARM PLATE HOLE FOR D3354-3 WHEEL SHAFT |                        |

**RELEASED**  
*07.12.07 MP***D3354-042 MIRROR  
ARM WELDMENT****NOTES:**

- 1) POSSIBLE SUPPLIER: SPAENAU, P/N TP-134
- 2) WELD PER DART QSI 004
- 3) FINISH: POWDER COAT PAINT FIRE RED (4.3.5.10) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP EDGES 0.010 TO 0.020

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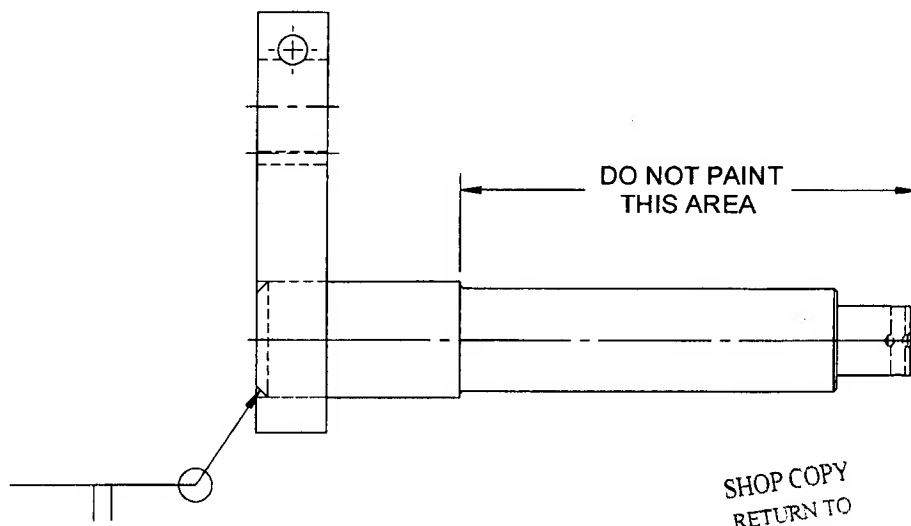
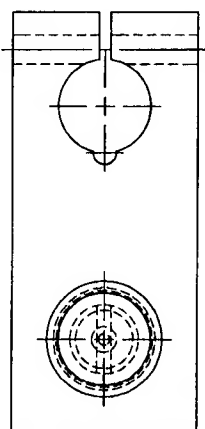
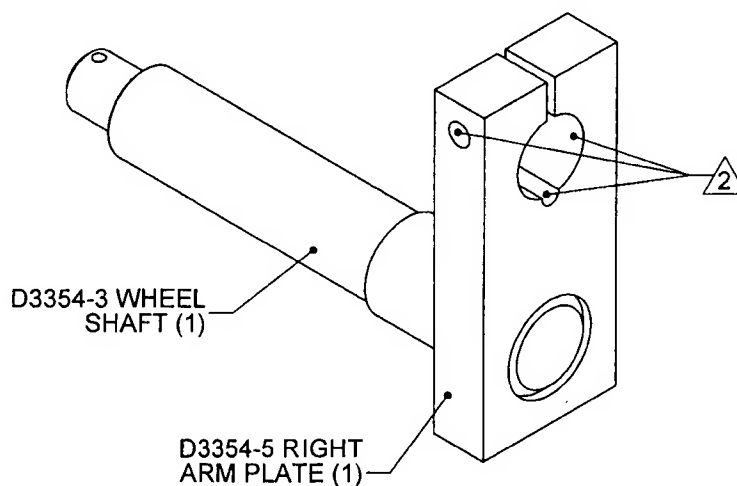
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| CHECKED<br><i>W</i>     | APPROVED<br><i>W</i>  | DRAWING NO.<br><b>D3354</b>                              | REV. C<br>SHEET 2 OF 7 |
| DATE<br><b>07.12.06</b> |                       | TITLE<br><b>LEFT ARM WELDMENT</b>                        | SCALE<br>1:2           |

**RELEASED**  
07/12/07 *W***D3354-043 RIGHT ARM WELDMENT****NOTES:**

- 1) WELD PER DART QSI 004
- 2) COVER INSIDE HOLES PRIOR PAINTING
- 3) FINISH: POWDER COAT PAINT FIRE RED (4.3.5.10) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP EDGES 0.010 TO 0.020

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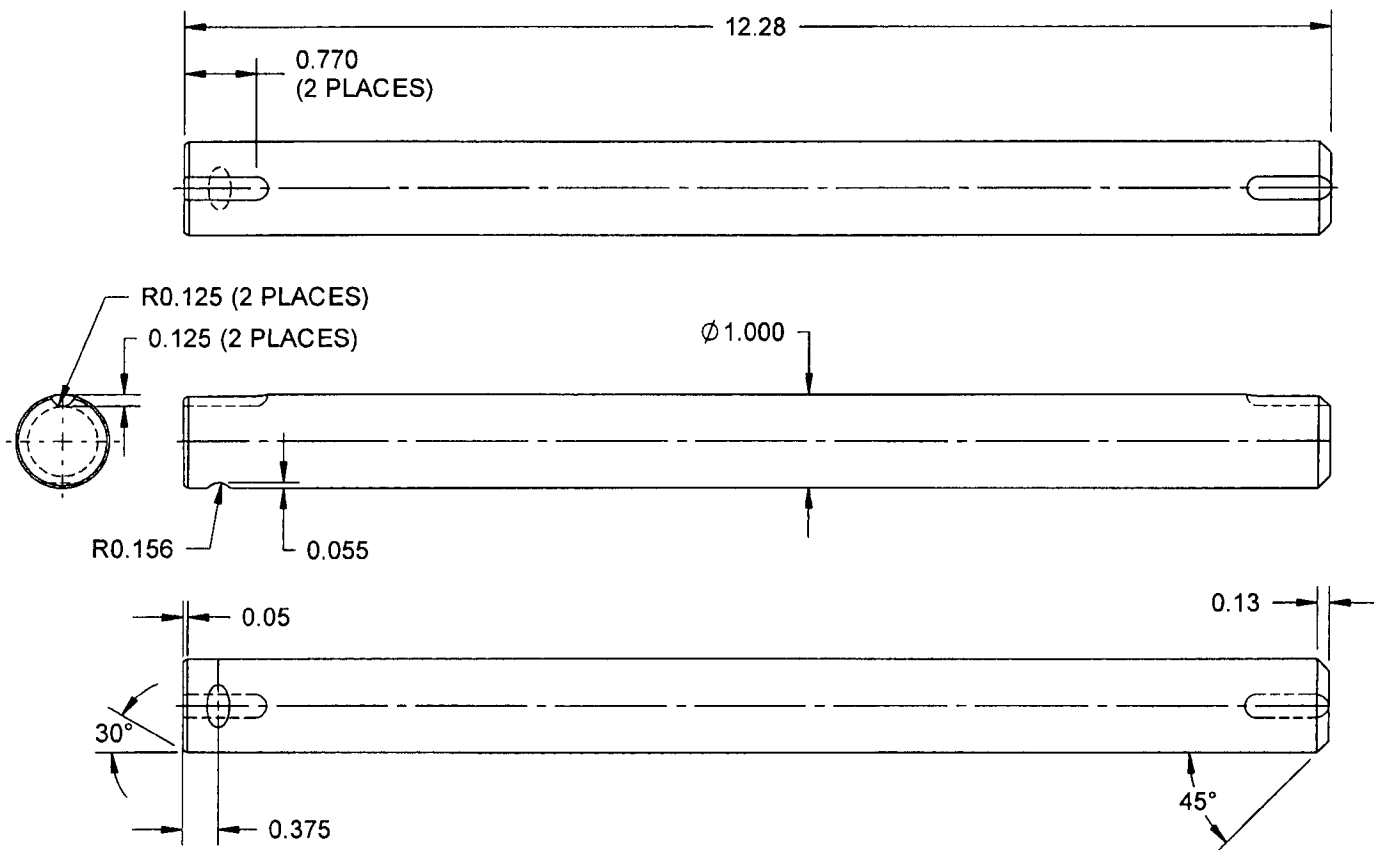
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| CHECKED<br><i>[Signature]</i> | APPROVED<br><i>[Signature]</i> | DRAWING NO.<br>D3354                              | REV. C<br>SHEET 3 OF 7 |
| DATE<br>07.12.06              |                                | TITLE<br>LEFT ARM WELDMENT                        | SCALE<br>1:2           |

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07/12/07 *[Signature]*



**D3354-1 INNER SHAFT**

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**NOTES:**

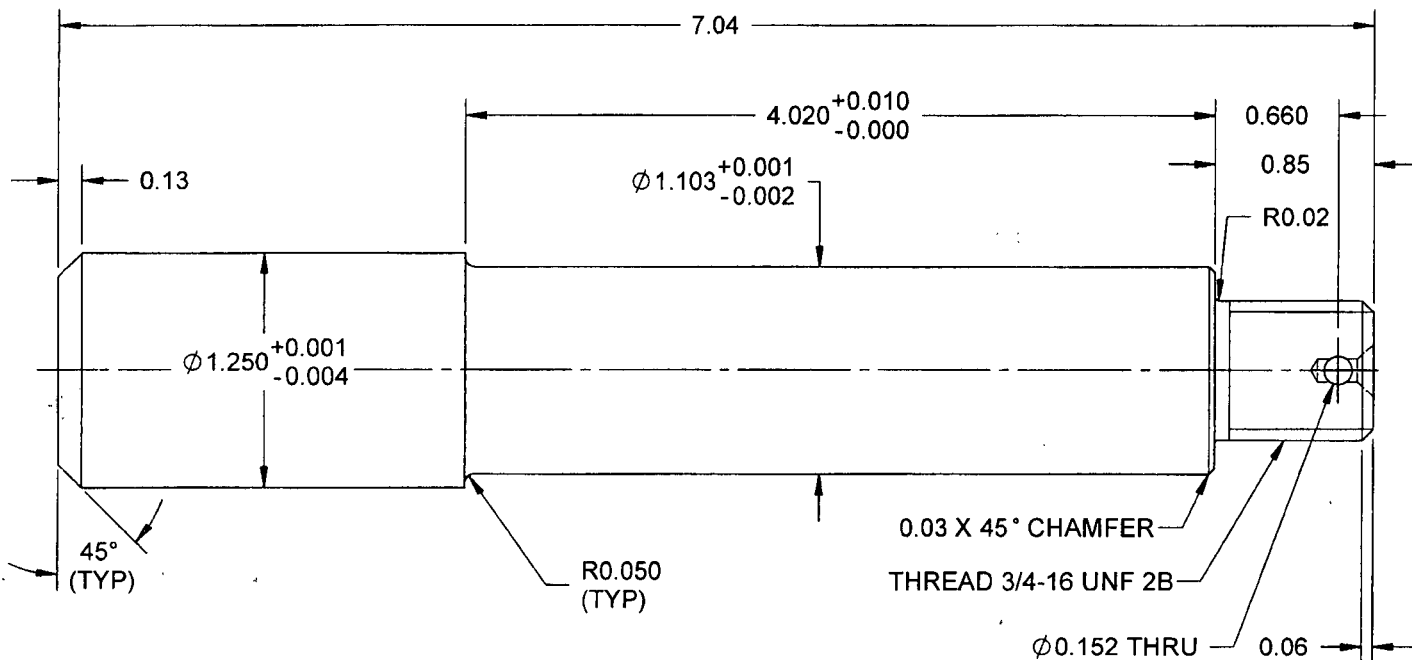
- 1) MATERIAL: AISI-4140 OR ASTM A304-02/ A-434-BC/ A193-03 - GRADE-B7/ A29-03/ A322-91 OR UNS#-G41400 ROUND BAR,  $\phi 1.250$  (REF. DART SPEC. M4140H-R)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010

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| DATE<br><b>07.12.06</b> |                       | TITLE<br><b>LEFT ARM WELDMENT</b>                        | SCALE<br>1:1           |

**RELEASED**  
07.12.07 *MP***D3354-3 WHEEL SHAFT**

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**NOTES:**

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- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.010 TO 0.020

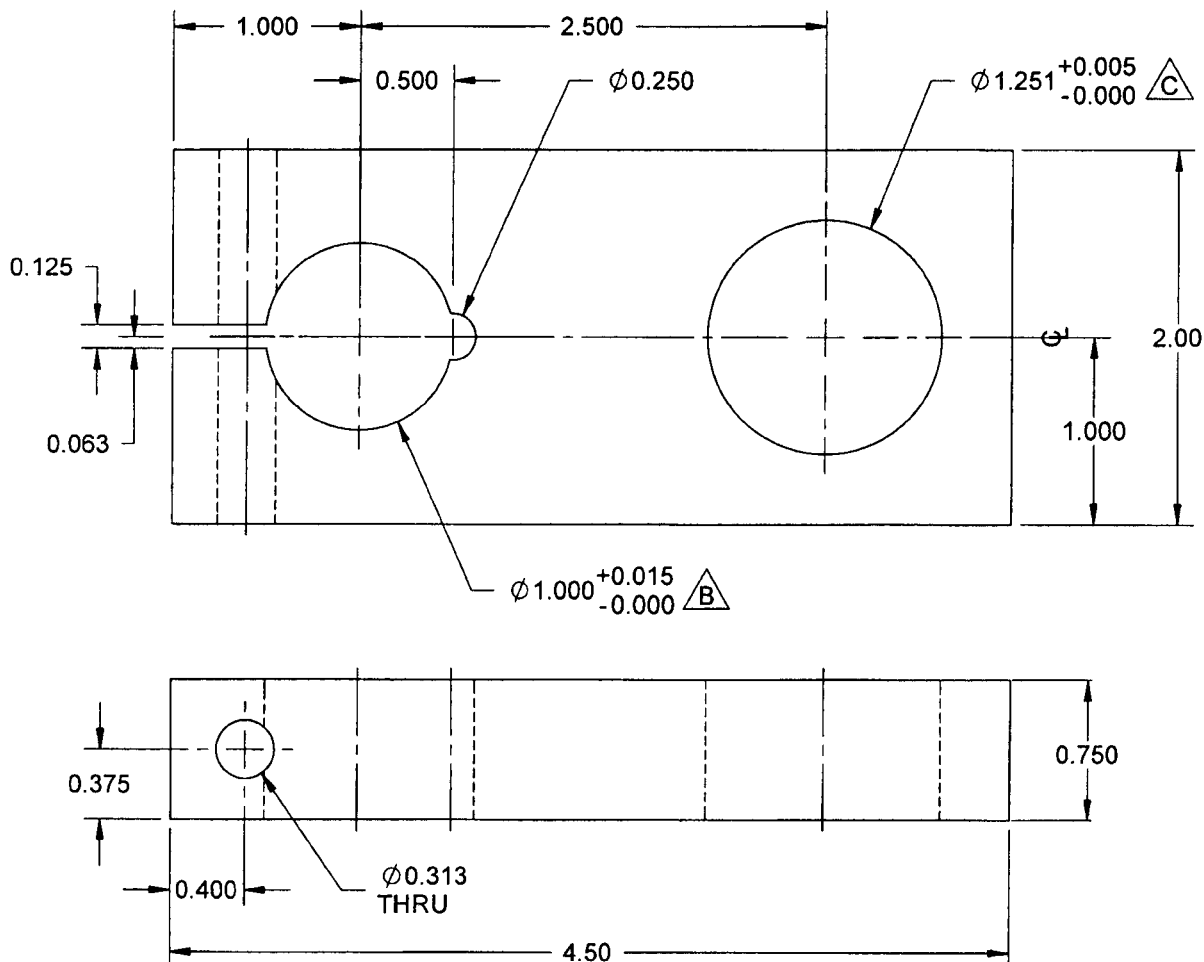
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| CHECKED<br><i>[Signature]</i> | APPROVED<br><i>[Signature]</i> | DRAWING NO.<br>D3354                              | REV. C<br>SHEET 5 OF 7 |
| DATE<br>07.12.06              |                                | TITLE<br>LEFT ARM WELDMENT                        | SCALE<br>1:1           |

RELEASED  
07/12/07 *[Signature]*



### D3354-5 RIGHT ARM PLATE

#### NOTES:

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A569/A570 OR CSA G40.21, 38W/44W/50W/60W/70W, 0.75 THICK MILD STEEL BAR (REF. DART SPEC. M1010-B)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.010 TO 0.020

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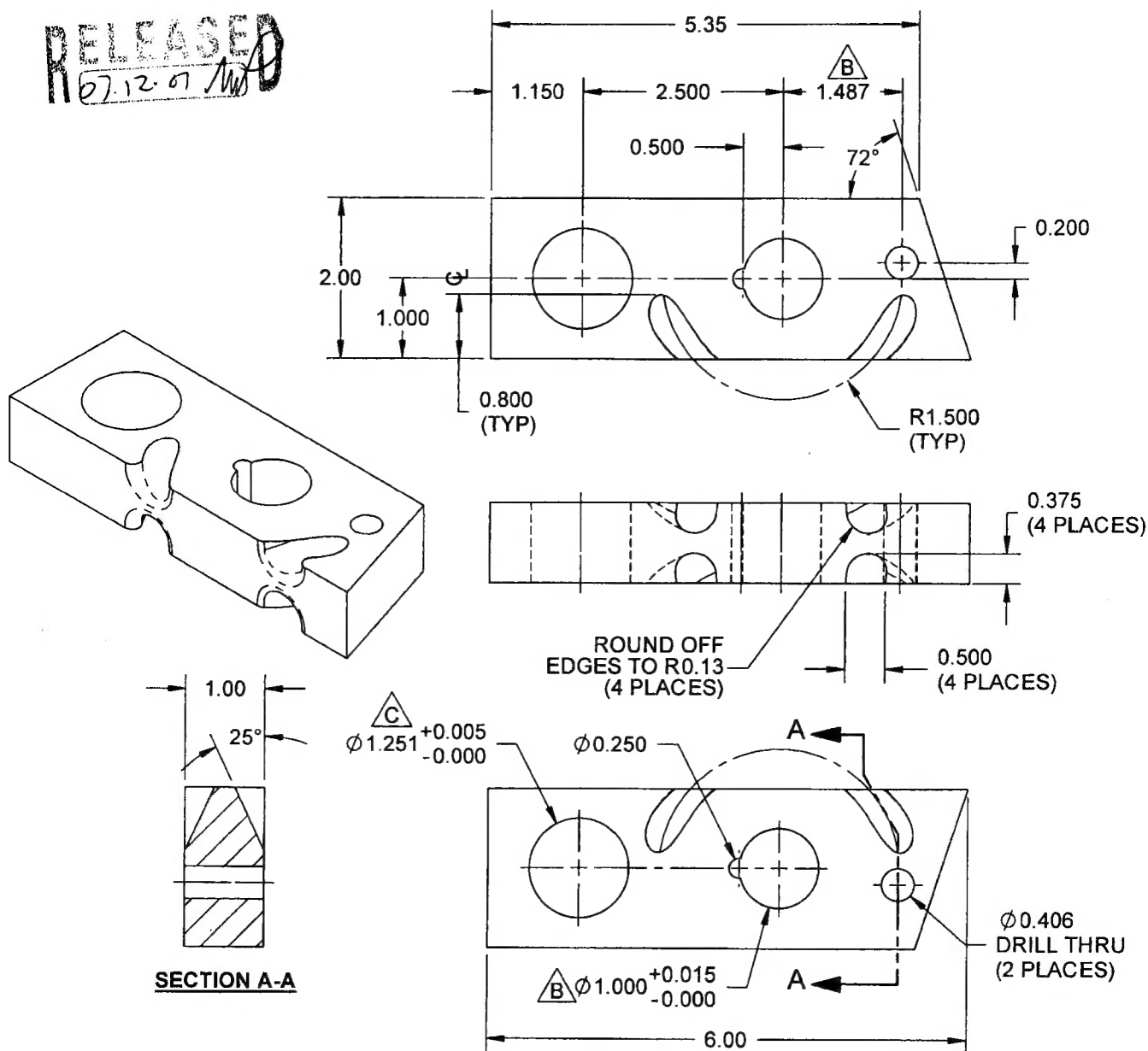
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| CHECKED<br><i>[Signature]</i> | APPROVED<br><i>[Signature]</i> | DRAWING NO.<br>D3354                              | REV. C<br>SHEET 6 OF 7 |
| DATE<br>07.12.06              |                                | TITLE<br>LEFT ARM WELDMENT                        | SCALE<br>1:2           |

RELEASED  
07.12.07 *[Signature]*



### D3354-7 LEFT ARM PLATE

#### NOTES:

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A569/A570 OR CSA G40.21, 38W/44W/50W/60W/70W, 1.00 THICK MILD STEEL BAR (REF. DART SPEC. M1010-B)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.010 TO 0.020

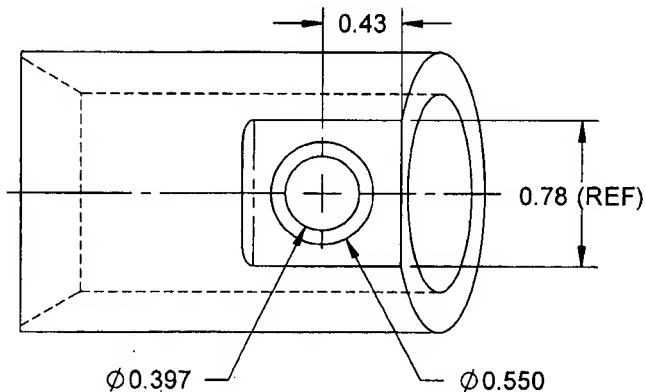
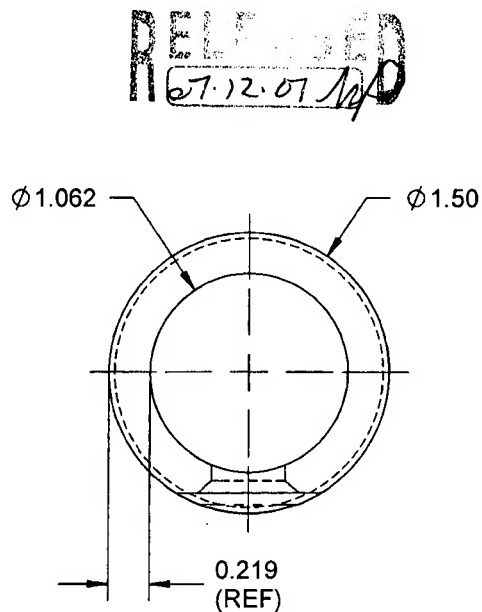
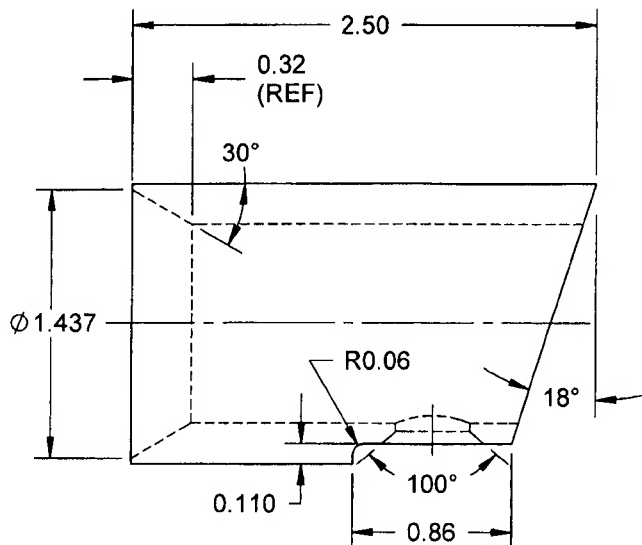
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| CHECKED<br><i>LS</i>    | APPROVED<br><i>MP</i> | DRAWING NO.<br><b>D3354</b>                              | REV. C<br>SHEET 7 OF 7 |
| DATE<br><b>07.12.06</b> |                       | TITLE<br><b>LEFT ARM WELDMENT</b>                        | SCALE<br>1:1           |



### **D3354-9 HANDLE SOCKET**

#### **NOTES:**

- 1) MATERIAL: AISI 1010-1025 SEAMLESS ROUND TUBING PER MIL-T-5066 OR ASTM A513-00 MT1020 SRA OR AMS 5075 OR AMS 5077, (REF. DART SPEC. M1020TR1.250W.219)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.010 TO 0.020

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